



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/528,265

03/17/2005

Hideomi Koinuma

052267

2280

38834

7590

10/07/2009

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP
1250 CONNECTICUT AVENUE, NW
SUITE 700
WASHINGTON, DC 20036

EXAMINER

LUND, JEFFRIE ROBERT

ART UNIT

PAPER NUMBER

1792

NOTIFICATION DATE

DELIVERY MODE

10/07/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No.		Applicant(s)	
	10/528,265		KOINUMA ET AL	
	Examiner		Art Unit	
	Jeffrie R. Lund		1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-13 is/are pending in the application.
- 4a) Of the above claim(s) 4-7, 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 12 and 13 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 8-11 and claims 12 and 13 are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as depositing a single material with a specific cross section, or etching.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 12 and 13 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims include the limitation "sufficiently large". It

is not clear how large “sufficiently large” is, thus, the claim fails to particularly point out and distinctly claim the subject matter.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li, US Patent 6,911,129.

Li teaches a masking mechanism that includes a mask 58 and means for moving the mask 59 in a uniaxial direction (x) over a first material source 53A, a second material source 53B, and a third material source 53C. (Figure 4, column 5 lines 32-60) The mask includes slots 67 and a peripheral edge (edge of the mask) (Figure 6a, 6b)

Li also teaches various masks for forming various binary and ternary phase films,

Art Unit: 1792

including, a mask that includes a first single action edge 85A with an angle of $90^\circ + \alpha$ for a first material; second single action edge 85B with an angle of $30^\circ + \alpha$ for a second material; and a third single action edge 85C with an angle of $-30^\circ + \alpha$ for a third material arranged in an equilateral triangle (i.e. spaced 120° relative to each other). Such that said first single action edge acts to determine a film thickness gradient of a first material, said second single action edge acts to determine a film thickness gradient of a second material, said third single action edge acts to determine a film thickness gradient of a third material, and the film is a ternary phase diagrammatic system which is composed with the first, second and third materials (Figure 9, column 8 lines 13-23)

Li differs from the present invention in that Li does not teach the specific arrangement or size of action edges.

The motivation for arranging the action edges of Li in a specific pattern of a specific size is to form a specific mask for depositing a specific film having a desired distribution of materials. Furthermore it has been held that:

- a. a change in shape is a matter of choice which a person of ordinary skill in the art would have found obvious. (See *In re Dailey*, 357 F.2d 669,149 USPQ 47 (CCPA 1966) MPEP 2144.04.IV.B);
- b. It was held in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), by the Federal Circuit that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the

prior art device, the claimed device was not patentably distinct from the prior art device. (Also see MPEP 2144.04 (IV)(A)), and

c. applying a known technique to a known device ready for improvement to yield predictable results is obvious (see *KSR International Co. v. Teleflex Inc.*).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange and size the action edges of Li in a specific pattern to form a specific mask to deposit a specific film have a desired distribution of materials as taught by Li.

Response to Arguments

7. Applicant's arguments filed June 23, 2009 have been fully considered but they are not persuasive.

In regard to Applicant's arguments directed to Li, the Examiner disagrees for the following reasons:

a. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant has attacked each embodiment individually and has pointed out missing elements in each, but has not addressed the elements taught by each embodiment or the combination of the embodiments as proposed in the rejection.

b. In response to applicant's argument that it would not be obvious to

combine the two embodiments, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

c. The embodiment of figure 4 teaches a mask and means of moving a mask. The embodiment of figures 8 and 9 teach specific mask openings arrangement and individual material supply that result in a ternary phase diagrammatic system. Therefore, the combination of the two embodiments teaches the claimed invention.

d. The Examiner recognizes that the source (53a-c) of the embodiment of figure 4 is different than the three sources (73a-c) in the embodiment 8 and 9. However, the source 53a-c is capable of supply any single source or mixture of sources for each individual source of the ternary layer. Furthermore, no source is claimed.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (10:00 am - 9:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

Art Unit: 1792

supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrie R. Lund/
Primary Examiner
Art Unit 1792

JRL
10/1/09